

FIG. 1 PRIOR ART

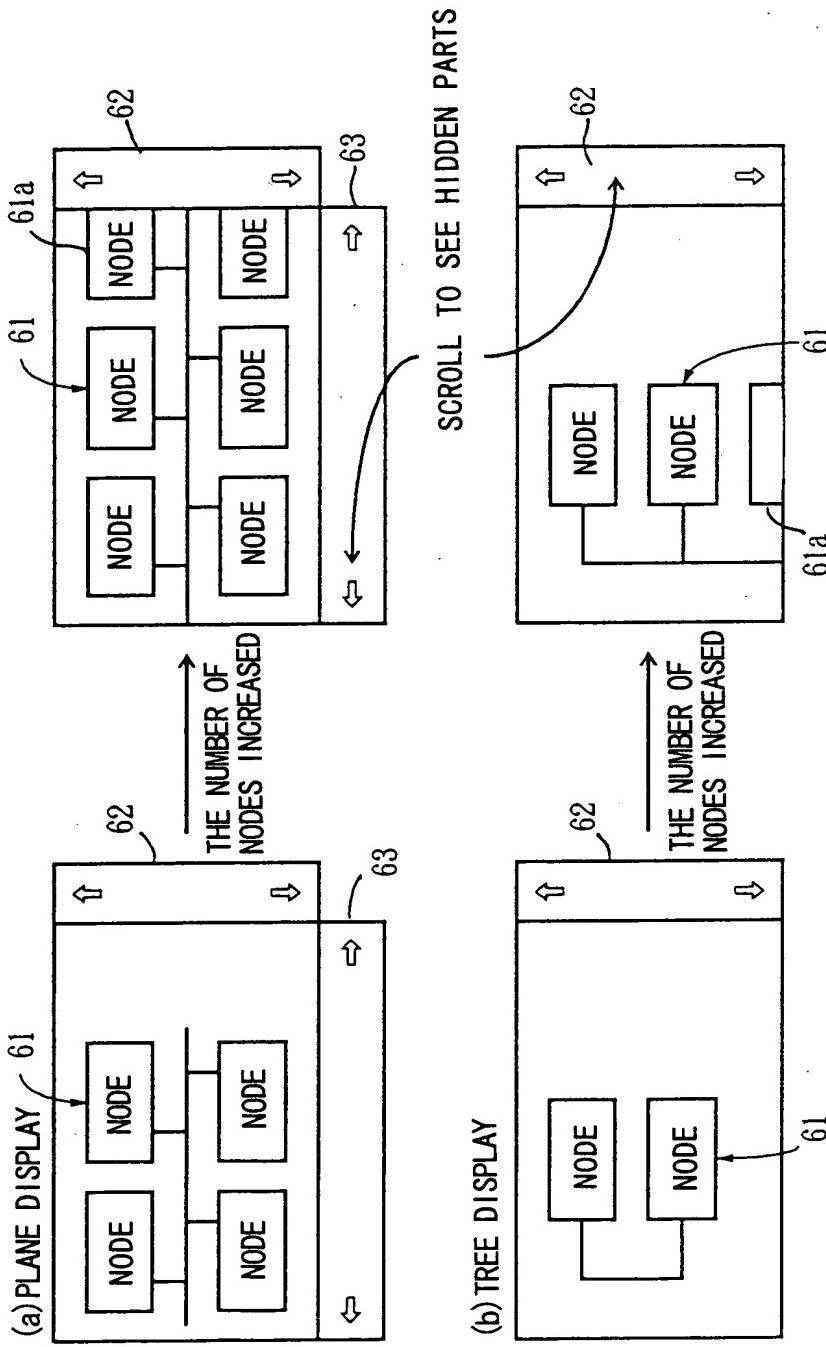


FIG. 2

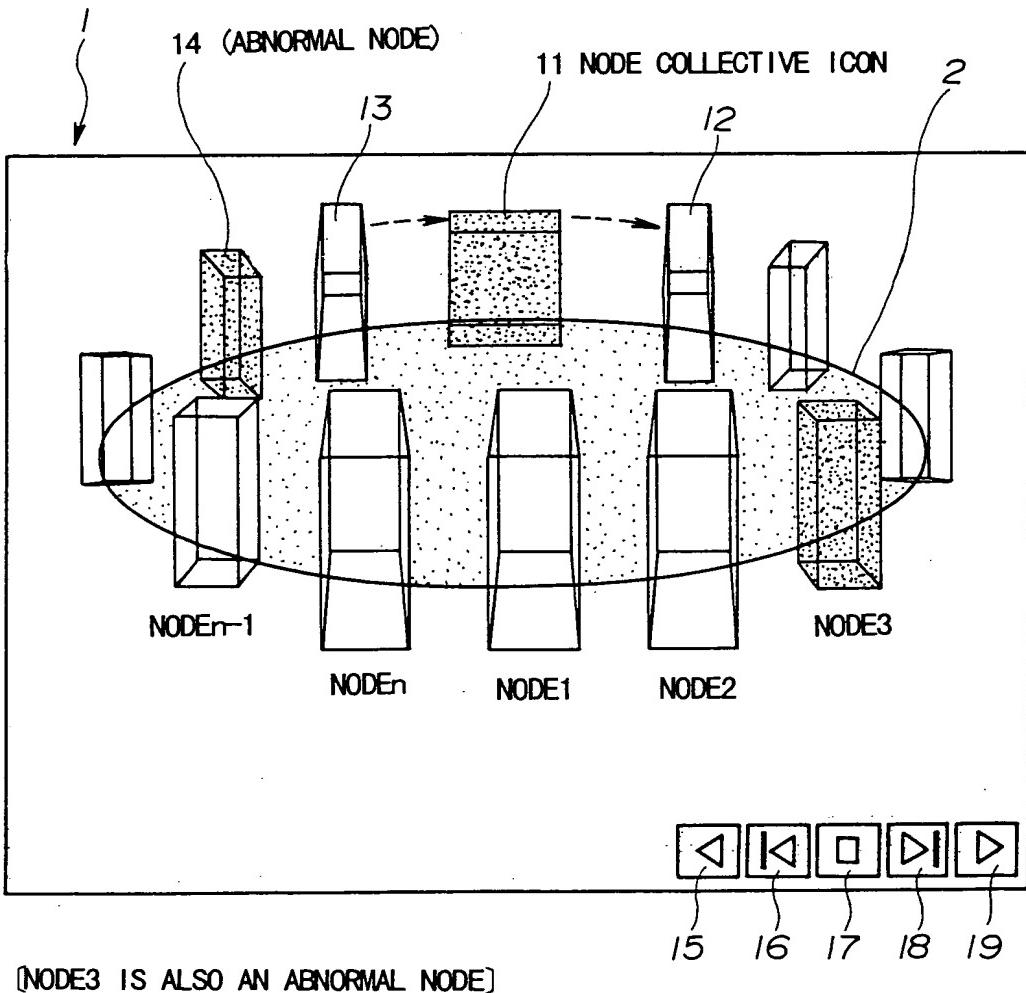


FIG. 3

00000000000000000000000000000000

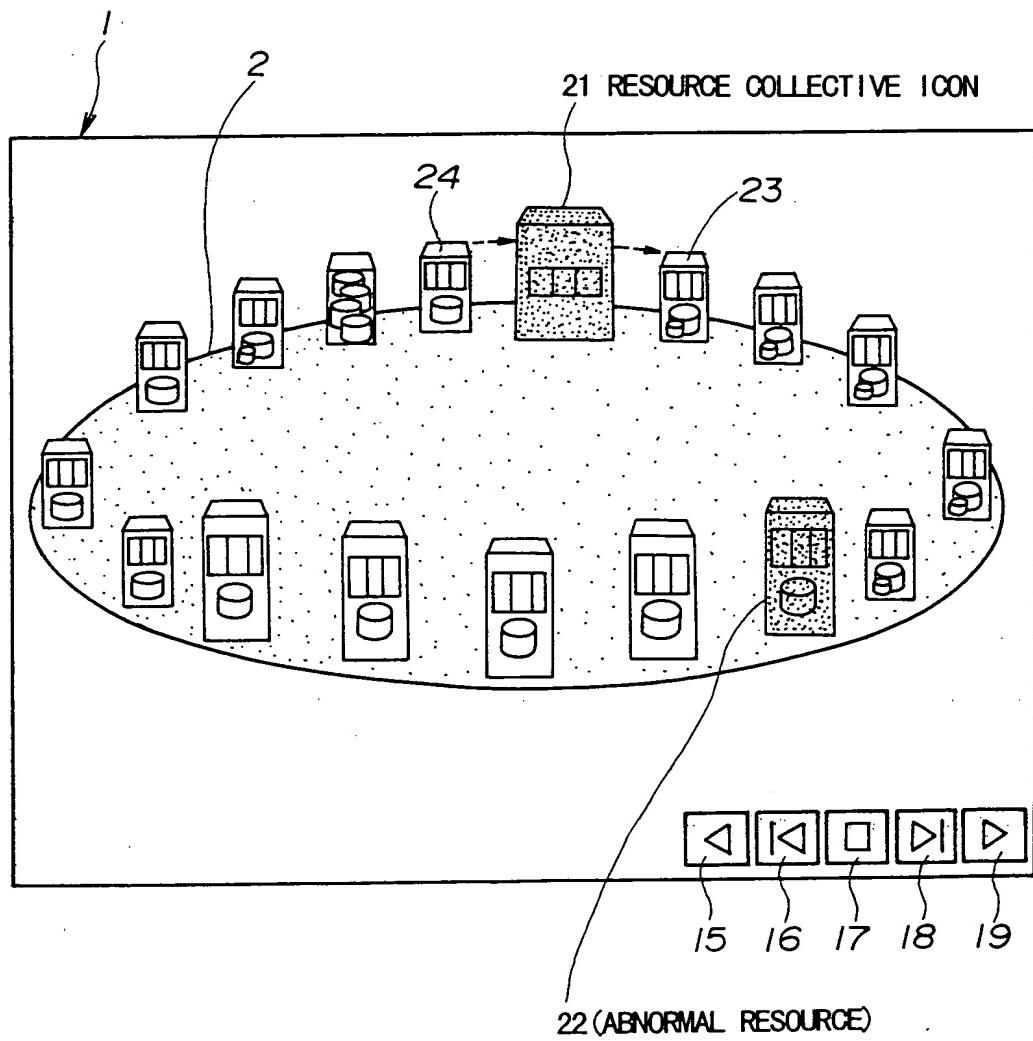


FIG.4

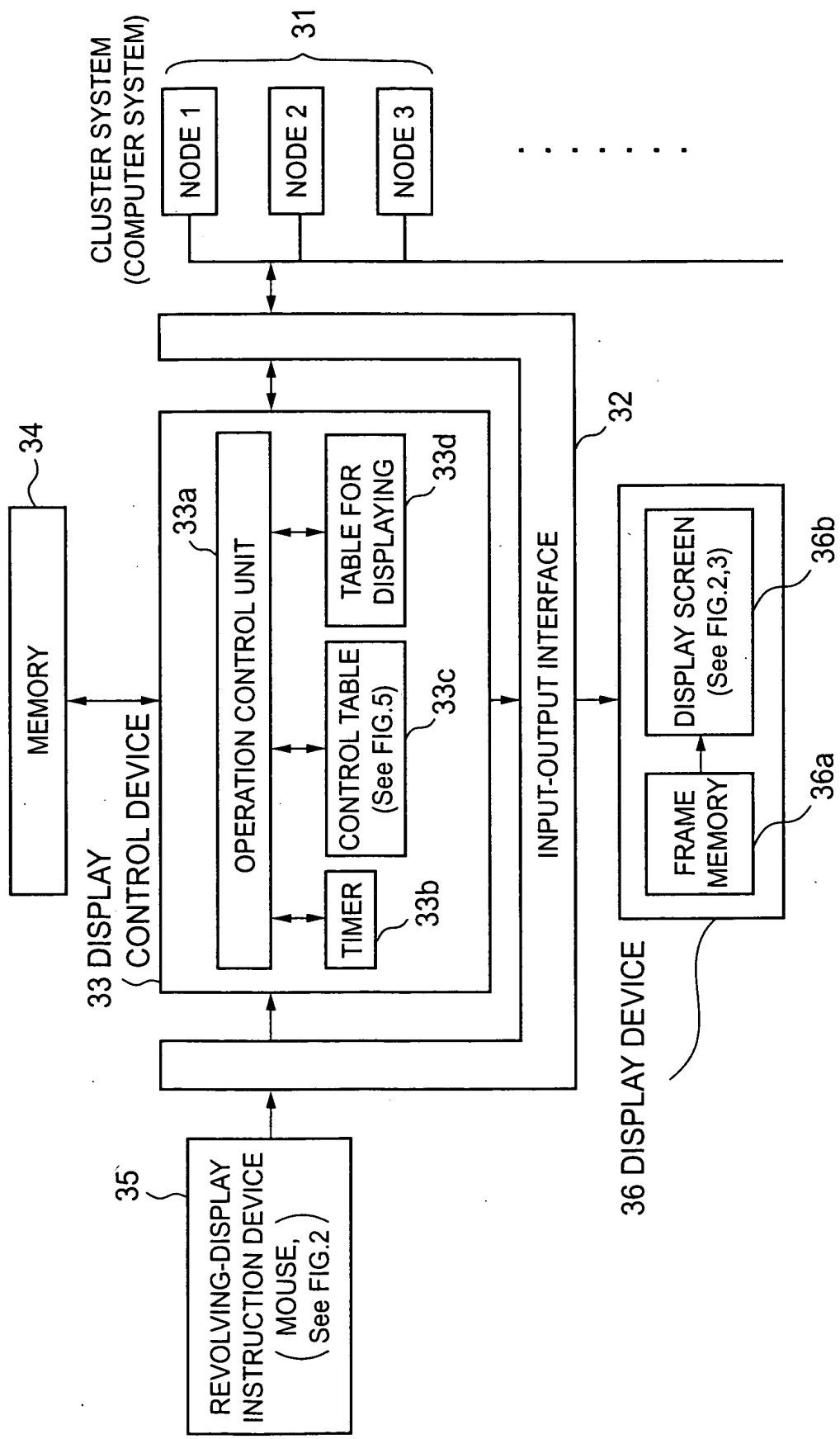


FIG.5

(X+Y=N)

CONTROL NUMBER	NODE NUMBER
1	NODE 1
2	NODE 2
:	:
X-1	NODE X-1
X	NODE X
N-Y+1	NODE N-Y+1
:	:
:	:
N-1	NODE N-1
N	NODE N

INDIVIDUAL DISPLAYS
(ON THE RIGHT SIDE OF THE LOOP)

INDIVIDUAL DISPLAYS
(ON THE LEFT SIDE OF THE LOOP)

X

Y
(≤D-X)

FIG.6

CONTROL NUMBER	NODE NUMBER
1	NODE 1
2	NODE 2
:	:
X-1	NODE X-1
X	NODE X
X+1	NODE X+1
:	:
N-Y	NODE N-Y
N-Y+1	NODE N-Y+1
:	:
:	:
N-1	NODE N-1
N	NODE N

INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)

COLLECTIVE ICON

INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)

X

M

Y
(=D-X)

The diagram illustrates a circular data structure. It consists of two concentric rings of nodes. The inner ring, labeled 'INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)', contains nodes numbered N through 1. The outer ring, labeled 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)', contains nodes numbered 1 through N. A central column of boxes, labeled 'COLLECTIVE ICON', lists 'CONTROL NUMBER' values from 1 to N. Brackets on the left side group nodes by their position relative to the center: nodes 1 through X-1 are grouped under 'INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)'; nodes X through X+1 are grouped under 'COLLECTIVE ICON'; nodes X+1 through N-Y are grouped under 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)'; and nodes N-Y through N-1 are grouped under 'INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)'. Brackets on the right side group nodes by their position relative to the center: nodes 1 through N-Y are grouped under 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)'; nodes N-Y+1 through N-1 are grouped under 'INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)'; and nodes N-1 through N are grouped under 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)'. Brackets at the top and bottom group nodes by their position relative to the center: nodes 1 through X are grouped under 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)'; nodes X+1 through N are grouped under 'INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)'; and nodes N-Y through N are grouped under 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)'. The total number of nodes is D, where D = X + M + Y.

FIG.7

CONTROL NUMBER	NODE NUMBER
1	NODE 2
2	⋮
⋮	NODE X-1
X-1	NODE X
X	NODE X+1
X+1	⋮
⋮	NODE N-Y
N-Y	NODE N-Y+1
N-Y+1	⋮
⋮	⋮
⋮	NODE N-1
N-1	NODE N
N	NODE 1

INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)

COLLECTIVE ICON

INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)

X

M

Y
(=D-X)

FIG.8

CONTROL NUMBER	NODE NUMBER
1	NODE N
2	NODE 1
:	NODE 2
X-1	:
X	NODE X-1
X+1	NODE X
:	NODE X+1
N-Y	:
N-Y+1	NODE N-Y
:	NODE N-Y+1
:	:
N-1	:
N	NODE N-1

INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)

COLLECTIVE ICON

INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)

X

M

Y (=D-X)

The diagram illustrates a circular data structure. It consists of three concentric layers of brackets around a central vertical axis. The innermost layer, labeled 'INDIVIDUAL DISPLAYS (ON THE LEFT SIDE OF THE LOOP)', contains 12 horizontal lines. The middle layer, labeled 'COLLECTIVE ICON', contains 8 horizontal lines. The outermost layer, labeled 'INDIVIDUAL DISPLAYS (ON THE RIGHT SIDE OF THE LOOP)', contains 12 horizontal lines. Brackets on the left side group the first 12 lines, brackets on the right side group the last 12 lines, and brackets along the bottom group the 8 middle lines. To the right of the structure, three labels are positioned: 'X' above the top bracket of the outer layer, 'M' below the middle bracket of the middle layer, and 'Y (=D-X)' below the bottom bracket of the outer layer.

FIG.9

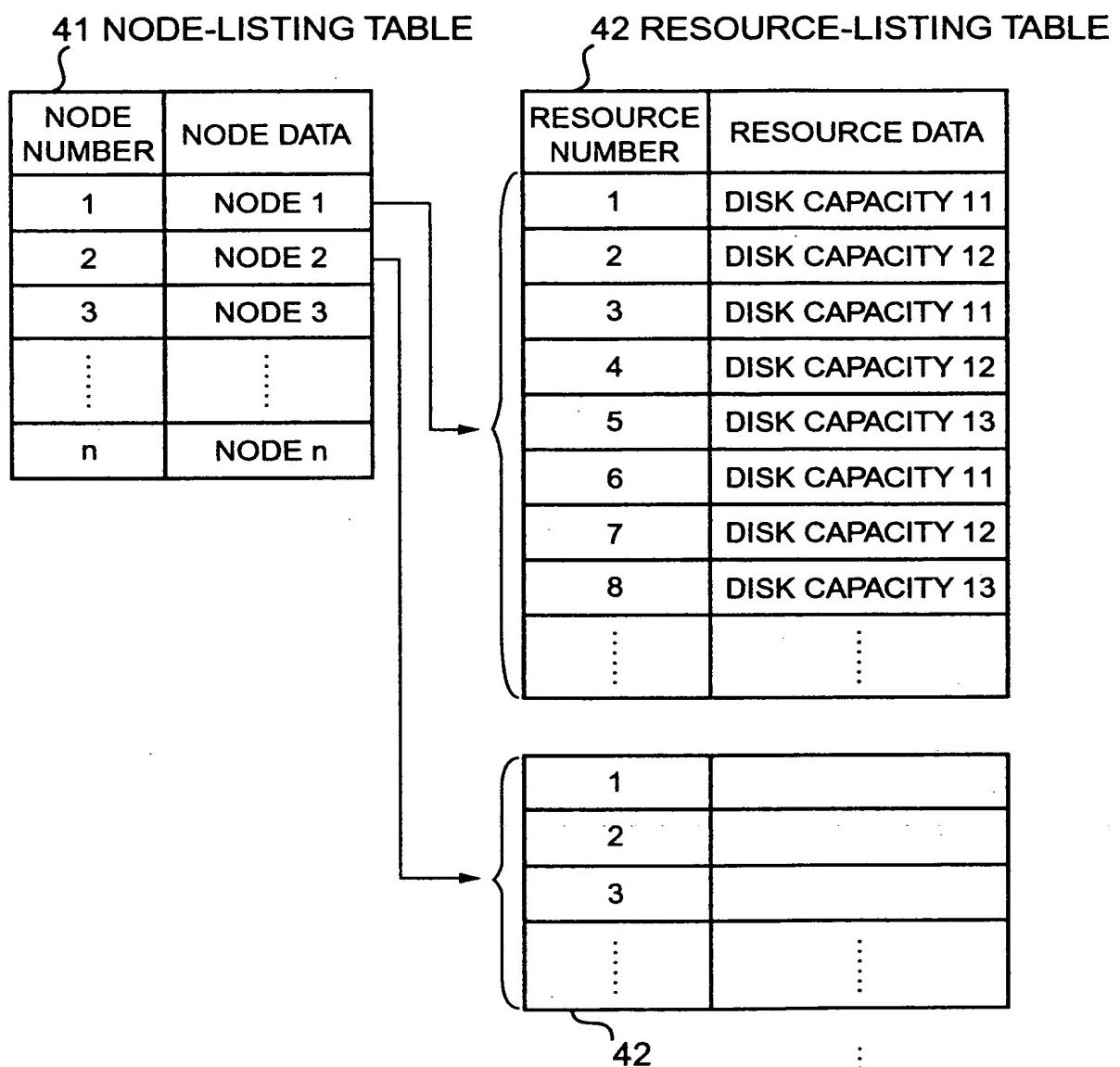


FIG.10

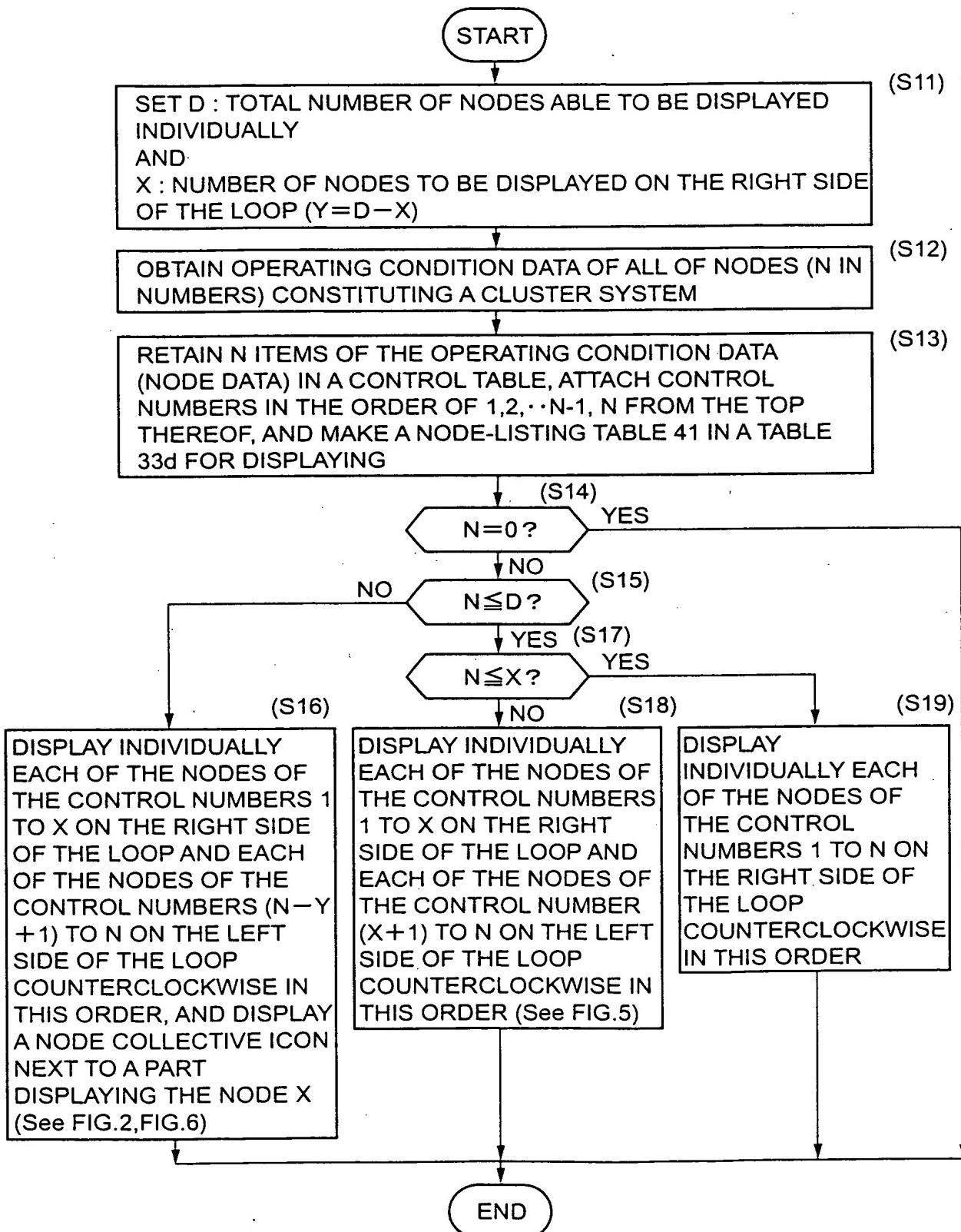


FIG.11

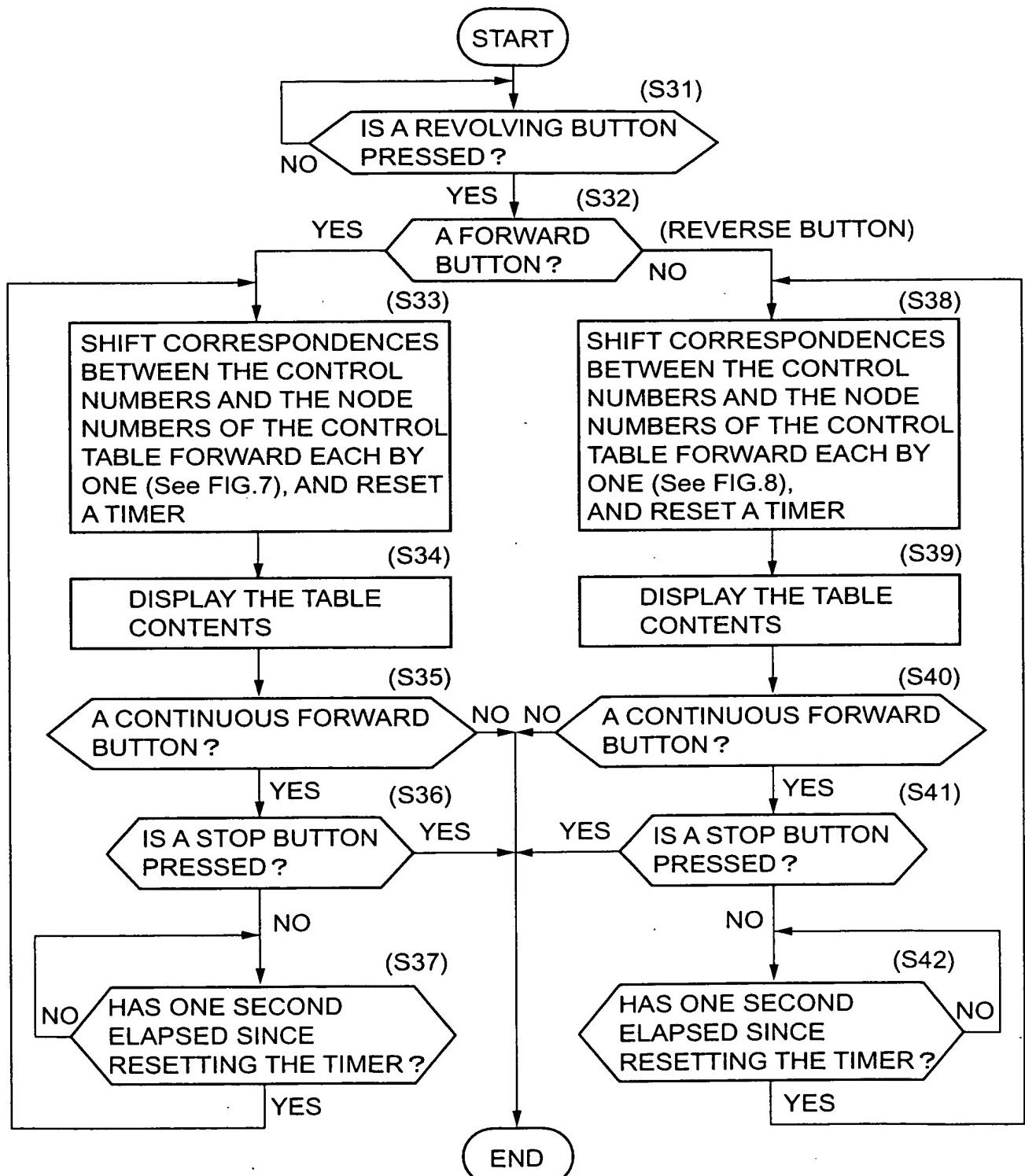


FIG. 12

